

CLAIMS

1. A stable ectoparasiticidal aqueous suspension formulation comprising an ectoparasiticidal amount of a spinosyn, or a physiologically acceptable derivative or salt thereof, milled to an average particle size of from about 1 to about 15 microns, and a surfactant in an amount effective to facilitate wetting the milled particles; a dispersant in an amount sufficient to form a spinosyn:dispersant weight ratio of from 3:1 to about 1:5; and water.
2. A formulation of Claim 1 wherein the average particle size of the spinosyn is about 2 to about 7 microns.
3. A formulation of Claim 1 or 2 wherein the amount of spinosyn is from about 0.02 to about 50 weight percent of the formulation.
4. A formulation of Claim 3 wherein the amount of spinosyn is from about 2 to about 5 weight percent of the formulation.
5. A formulation of Claim 1, 2, 3 or 4 wherein the spinosyn is spinosyn A.
6. A formulation of Claim 1, 2, 3, 4 or 5 wherein the dispersant is ionic.
7. A formulation of Claim 1, 2, 3, 4, 5 or 6 which further comprises:
- about 0.1 to about 10 weight percent of a surfactant,
 - about 0.3 to about 5 weight percent of a mineral thickener,
 - about 0.05 to about 3 weight percent of a gum, and
 - an antimicrobial agent acceptable for topical veterinary applications in an amount effective to prevent microbial growth in the suspension.
8. A formulation of Claim 7 wherein the surfactant is present in an amount of from about 0.1 to about 5 weight percent of the formulation.
9. A formulation of Claim 7 wherein the spinosyn is present in an amount of about 25 grams per liter of the formulation, the dispersant is a condensed formaldehyde/naphthalene sulfonic acid or salt thereof, the gum is a xanthan gum, and the water is deionized, and which further comprises propylene glycol and a foam control agent.

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Sub B

Sub A1

Sub A2

sub A3

10. An article of manufacture, comprising packaging material and a formulation for controlling an ectoparasite infestation on a small ruminant or companion animal contained within said packaging material, wherein said formulation comprises:

5 a unit dose of a formulation of any one of Claims 1 to 9; and wherein said packaging material comprises a label or package insert with instructions for administering the dose to the animal.

11. A method of manufacturing a stable ectoparasiticial aqueous suspension formulation, said method comprising:

10 (a) wet-milling a composition containing a spinosyn, or a physiologically acceptable derivative or salt thereof, with a surfactant, a dispersant, an antifoam agent and water to form a "grind composition" in which the spinosyn has an average particle size is from about 1 to about 15 microns;

(b) blending an aqueous suspension containing about 2 to about 10
15 percent by weight of a mineral thickener with a dispersion composition containing about 1 to about 4 percent by weight of a gum in a C₂-C₄ alkylene diol to form a "hydrated suspension composition" containing about 0.5 to about 8 percent by weight of the mineral thickener; and

(c) diluting a first volume of the grind composition with a second
20 volume of the hydrated suspension composition sufficient to provide the desired spinosyn concentration.

sub A4

12. A method of controlling an ectoparasite infestation on a small ruminant or companion animal, comprising administering to the animal an effective amount of a formulation of any one of Claims 1 to 9.

25 13. The method of Claim 12 wherein the formulation is applied to the head, neck, shoulders or back of the animal by a spot-on or pour-on protocol.

14. The use of a formulation of Claim 1, 2, 3, 4, 5, 6, 7, 8 or 9 in the preparation of a medicament for controlling an ectoparasite infestation on a small ruminant or companion animal.

30 15. A stable ectoparasiticial aqueous suspension formulation comprising an ectoparasiticial amount of a spinosyn, or a physiologically acceptable derivative or salt thereof, milled to an average particle size of from about 1 to about 15

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